

RESPONSE TO COMMENTS (part 1)

on 2002-2004 STATE OF NEW MEXICO

§303(d) LIST FOR ASSESSED SURFACE WATERS:

COMMENT SET A --

Surface Water Quality Bureau (SWQB) Staff Comments -- The following changes were made to the database and 303(d) list and/or Record of Decision (ROD) as a result of additional SWQB and EPA Region 6 staff review:

The field name “Segment ID” was changed to “Assessment Unit ID.”

The “NPDES” field was deleted and replaced with the “Individual Active NPDES Permit” information towards the bottom of each entry. This information is provided to alert users of the 303(d) list that there are active NPDES discharge permits in the watershed of the given assessment unit. The expanded information includes Permit Number and Permit Facility Name. This information is queried from the SWQB database. This database currently tracks Individual NPDES permits only (i.e., it does not include General NPDES permits such as storm water permits). The NPDES query was restricted to include only Active permits. Some NPDES permittees discharge directly into the given assessment unit, while others discharge into tributaries of the given assessment unit. Users of the 303(d) list should contact the SWQB Point Source Regulation Section (phone 827-2827) for additional information on individual NPDES permits.

A list of Assessment Units by 8-digit HUC was added to the front of the list.

The **Magnitude** field under the Probable Sources of Impairment section was removed from the draft 303(d) list because it is set to the default of “Moderate.” Since all entries stated “Moderate,” no discriminating information was relayed on the draft 303(d) list so the field was removed. The Magnitude field in the Probable Causes of Impairment Section is valuable during generation of the 305(b) list of all waters in the state because a Magnitude of “Not Impairing” in the Probable Cause section indicates “Full Support, Impacts Observed” status.

All “Fish guidelines” listings were changed to “Mercury in fish tissue.” These assessment units are listed because they are on the *Fish Consumption Guidelines Due to Mercury Contamination* document (last updated February 2001 -- available on the SWQB website). Consumption restrictions are placed on waters due to mercury contamination in fish tissue. USEPA Region 6 requires SWQB to list all waters that have fish consumption guidelines.

All “Nutrient” and/or “Nuisance algae” listings were changed to “Plant nutrients” and all “Siltation” listings were changed to “Bottom deposits” for lakes, playas, and reservoirs in order to be consistent with our current narrative water quality standards.

Urban Storm Runoff was added as a Probable Source for **Raton Creek (Chicorica Creek to headwaters)** due to field observations by SWQB staff.

Highway Maintenance and Runoff and Range Grazing were added as Probable Source for **Manuelas Creek (Ocate Creek to headwaters)** due to field observations by SWQB staff.

Highway Maintenance and Runoff and Range Grazing were added as Probable Source for **Ocate Creek (Ocate to Wheaton Creek)** due to field observations by SWQB staff.

Silvaculture was added as a Probable Source for **Mora River (Rio la Casa to headwaters)** due to field observations by SWQB staff.

Los Alamos Canyon (Guaje Canyon to headwaters) was changed to **Los Alamos Canyon (San Ildefonso Pueblo bnd to headwaters)** to correct the assessment unit definition for tribal jurisdiction.

Total Recoverable Selenium was added as a Probable Cause for **Pueblo Canyon (Los Alamos Canyon to headwaters)** due to re-evaluation of the data. PCBs were removed as a Probable Cause after the draft 303(d) list was formally sent to USEPA Region 6 for approval (see ROD for additional details).

Non-irrigated Crop Production was removed as a Probable Source for **Rio Pueblo de Taos (Rio Grande to Arroyo del Alamo)** and **Rio Pueblo de Taos (Arroyo del Alamo to R Grande del Rancho)** due to field observations by SWQB staff.

Total Organic Carbon was removed as a Probable Cause for **Cañones Creek (Abiquiu Reservoir to headwaters)**. The reasons for this action were detailed in the draft Record of Decision (ROD).

Plant Nutrients was added as a Probable Cause for **Chavez Creek (Rio Brazos to headwaters)** based on Level one and Level two plant nutrient analyses performed June 2002.

Highway Maintenance and Runoff was removed and Silviculture was added as a Probable Source for **Chihuahueros Creek (Cañones Creek to headwaters)** due to field observations by SWQB staff.

Plant nutrients and bottom deposits were added back to **Hopewell Lake** as causes of Partial Support after re-evaluation of the 1999 data.

Grazing was added as a Probable Source for **Polvadera Creek (Cañones Creek to headwaters)** due to field observations by SWQB staff.

Watershed Runoff Following Forest Fire (1996 Dome Fire) was added as a Probable Source for **Capulin Canyon (Rio Grande to headwaters)** due to field observations by SWQB staff.

Galisteo Creek (Perennial reaches abv Santo Domingo bnd) was corrected to read WQS Reference 20.6.4.121 and high quality coldwater fishery as the Impaired Designated Use(s).

Recreation and Tourism Activities was added as a Probable Source for **Las Huertas Creek (Placitas to Capulin Canyon)** due to field observations by SWQB staff.

Spills (at helipad while filling sprayed with DDT) were added as a Probable Source for **Rito Canon de los Frijoles (Rio Grande to headwaters)** due to historical knowledge from SWQB staff.

Selenium was changed from Partial Support to Full Support for **Ancho Canyon (Rio Grande to headwaters)** after re-evaluation of the data. Accordingly, Ancho Canyon was removed from the 303(d) list and the ROD.

Gross Alpha was changed from Non Support to Partial Support for **Mortandad Canyon (San Ildefonso Pueblo bnd to headwaters)** after re-evaluation of the data (see ROD for details).

Total Mercury was removed as a Probable Cause of Non Support for **Pajarito Canyon (Rio Grande to headwaters)** after re-evaluation of the data. The draft listing was based solely on TOTC values (numbers values calculated from other results) versus results determined directly from time-weighted composite sampling. Therefore, the listing was removed.

American Creek (Rio de las Palomas to headwaters) was removed from the 303(d) list because it is not perennial and, therefore, does not fall under WQS 20.6.4.503. During seven sampling visits in 1998, there was no flow in the channel. Therefore, no water quality data could be collected. Designated uses that apply to this ephemeral water are livestock watering and wildlife habitat. Water quality standards for stream bottom deposits, turbidity, and temperature do not apply. A de-list letter was prepared and the ROD was updated to reflect the de-listing.

Fish culture was removed as Not Supporting from **Fenton Lake** because there is no hatchery at Fenton Lake to be impaired.

Bluewater Creek (abv Bluewater Lake and on private inholdings) was changed to **Bluewater Creek (Navajo Nation bnd to headwaters)** to correct the assessment unit definition for tribal jurisdiction. The size was also corrected.

Bluewater Creek (R San Jose to Bluewater Lake except Navajo) was changed to **Bluewater Creek (Rio San Jose to Navajo Nation bnd)** to correct the assessment unit definition for tribal jurisdiction.

The size on **Rio Puerco (Rito Olguin to headwaters)** was corrected to 39.6 miles.

The size on **San Pablo Canyon (Rio Puerco to headwaters)** was corrected to 11.5 miles.

The size on **Alamosa Creek (Perennial reaches abv Monticello diversion)** was corrected to 13.4 miles.

Road Maintenance and Runoff was added as a Probable Source for **Redondo Creek (Sulphur Creek to headwaters)** due to field observations by SWQB staff.

Grazing was added as a Probable Source for **San Antonio Creek (East Fork Jemez R to headwaters)** due to historical knowledge of past land use practices and field observations by SWQB staff.

Sulphur Creek (San Antonio to headwaters) assessment unit was changed to **Sulphur Creek (Redondo to headwaters)** because Sulphur Creek intersects with Redondo before intersecting with San Antonio.

Urban Stormwater was added as a Probable Source for **Gallinas River (San Augustin to Las Vegas Diversion)** due to field observations by SWQB staff.

Road Directly in Stream was added as a Probable Source for **Alamosa Creek (Perennial reaches abv Monticello Diversion)** due to field observations by SWQB staff.

Grazing was added as a Probable Source for **Pecos River (Alamitos Canyon to Willow Creek)** due to field observations by SWQB staff.

Natural Sources was added as a Probable Source for **Pecos River (Sumner Reservoir to Canon del Oso)** due to field observations by SWQB staff.

Chronic cadmium, acute zinc, and chronic zinc were added as causes of Non Support for **Willow Creek (Pecos River to headwaters)** due to analyses of water quality data taken during the 2001 intensive watershed. See the ROD for details.

Highway Maintenance and Runoff was removed as a Probable Source for **Rio Mora (Pecos River to headwaters)** due to field observations by SWQB staff.

Toxic substances were removed as a cause of non support for **Tule Lake** upon re-evaluation of the 1994 Playa Lakes Report (NMED/SWQ-96/3). See ROD for details.

Toxic substances were removed as a cause of non support for **Dennis Chavez Lake (Curry)** upon re-evaluation of the 1994 Playa Lakes Report (NMED/SWQ-96/3). See ROD for details.

Organic enrichment/Low DO and Nutrients were removed as a cause of non support and replaced with Plant Nutrients FSIO for **Ingram Lake** upon re-evaluation of the 1994 Playa Lakes Report (NMED/SWQ-96/3). See ROD for details.

Boron was changed to Full Support Impacts Observed for **Lane Salt Lake** upon re-evaluation of the 1994 Playa Lakes Report (NMED/SWQ-96/3). There was only one measurement available for the assessment. See ROD for details.

Laguna Walden was removed from the 303(d) list and ROD. Although high salinity has been observed, there are no applicable salinity standards under the designated uses of Livestock Watering and Wildlife Habitat.

Williams Sink (Eddy) was removed from the draft list and ROD. Although high salinity has been observed, there are no applicable salinity standards under the designated uses of Livestock Watering and Wildlife Habitat.

Plant nutrients were added as a cause of Partial Support for **Rio Ruidoso (Seeping Springs Lake to Mescalero Apache bnd)** based on plant nutrient assessments completed in 2002.

Mercury in Fish Tissue (downstream of Hammond Diversion) was added as a Probable Cause and Septage Disposal and Septic Tanks were added as Probable Sources for **San Juan River (Animas River to Canon Largo)** due to findings that resulted in the placement of the San Juan River on the Fish Consumption Guidelines and field observations by SWQB staff, respectively.

Municipal Point Sources, Septage Disposal, and Septic Tanks were added as Probable Sources for **San Juan River (Canon Largo to Navajo Reservoir)** due to field observations by SWQB staff.

Septic Tanks was added as a Probable Source for **Animas River (Estes Arroyo to CO border)** due to field observations by SWQB staff.

Municipal Point Sources, Industrial Point Sources, and Septic Tanks were added as Probable Sources for **Animas River (San Juan River to Estes Arroyo)** due to field observations by SWQB staff.

Industrial Point Sources, Septic Tanks, and Feedlots were added as Probable Sources for **LaPlata River (San Juan River to CO border)** due to field observations by SWQB staff.

Mercury in Fish Tissue was added as a Probable Cause and Industrial Point Sources, Municipal Point Sources, Septic Tanks, and Landfills were added as Probable Sources for **San Juan River (Navajo bnd at Hogback to Animas River)** due to field observations by SWQB staff.

Gila Trout was added to correct the Federal aquatic T/E species field for **Mogollon Creek (Perennial reaches abv USGS gage)** due to information obtained from the US Fish and Wildlife Service and the NM Game and Fish Department.

COMMENT SET B --

Received via email 8/4/02 from Tracy McCallum (tsm@laplaza.org)

Subject: 303(d) list
Date: Sun, 04 Aug 2002 16:23:03 -0600
From: Tracy McCallum <tsm@laplaza.org>
To: david_hogge@nmenv.state.nm.us

COMMENT: (1) Point-source polluters exceeding the TMDL should not only be forced to reduce their emissions, but to remove the cause of the emissions. The tailings ponds west of Questa are a good example. Molycorp should be forced to remove all the tailings, contaminated material and contaminated earth forming the bottom of the ponds and bury them someplace away from human habitat and the possibility of contaminating water. The burial pit could conform to the regulations governing toxic solid waste disposal. Molycorp created these ponds, WHICH HAVE BEEN DOCUMENTED TO BE CONTRIBUTING TO THE POLLUTION OF THE RED RIVER, and should be required to take responsibility for their complete removal.

***RESPONSE:** *Operations and reclamation of tailings impoundments (as well as other mining disturbances) are regulated under the NPDES permitting program under 40 Code of Federal Regulations Part 122, the NM Groundwater Quality Bureau (GWQB) discharge permitting program under Subpart III of 20 NMAC 6.2 (State of New Mexico Ground and Surface Water Quality Protection Regulations), and the NM Mining & Minerals Division mining regulations under 19 NMAC 10.2 (New Mexico Mining Act Rules). Both of the latter two impose operating requirements as well as appropriate reclamation actions to both re-establish a "self sustaining ecosystem," and to ensure "that the activities to be permitted or authorized will be expected to achieve compliance with all applicable air, water quality, and other environmental standards ..." NPDES regulates discharges of pollutants to "waters of the United States" from these facilities until all pollutant discharges are eliminated, and the site is finally stabilized by vegetation, or equivalent stabilization measures have been employed.*

COMMENT: (2) The Rio Costilla Livestock Association has overgrazed their lands surrounding Costilla Creek for years, contributing to the degradation of Costilla Creek, both as a result of runoff, and cattle directly breaking down the creek's banks. Again, as a point source polluter, they must be forced to reduce cattle grazing to a level the environment can support.

***RESPONSE:** *Unless the cattle operation meets the definition of a Concentrated Animal Feeding Operation (CAFO), grazing activities are considered potential sources of non-point pollution under the current Clean Water Act. As such, the SWQB can offer suggested Best Management Practices (BMPs) and matching funds via the Clean Water Act Section 319 program to help livestock associations and individual ranchers implement BMPs to reduce the impacts of grazing on water quality. A portion of Costilla Creek is listed as impaired due to turbidity and grazing is identified as a probable source of this impairment. Because it is on the 303(d) list, CWA 319 project proposals designed to reduce sources of turbidity through implementing grazing BMPs will receive priority. The Watershed Protection Section of the SWQB oversees the CWA 319 projects and has several examples of successful BMP implementation projects on grazing lands. They can be contacted at 505-827-1041.*

COMMENT: (3) Not listed in the probable causes and sources of impairment of the Rio Grande, is the destabilization caused by the Hondo fire several years ago. It is known to have denuded the watershed, bringing

tons of mud into the river during the first few years after the fire, and is still contributing to the impairment. I don't know whether these watersheds are administered by the BLM or Carson National Forest, but whoever it is should take an active role in regeneration of that burned over land that is washing into the river to at least reduce further damage should we have a really heavy snowfall one of these years. Fortunately for the Rio Grande, drought conditions have prevailed in these lands since the Hondo fire.

***RESPONSE:** *Agreed. Probable Source code 8080 -- Watershed runoff following forest fire -- was added to assessment units Rio Grande (Red River to CO border). It was also added to Rio Grande (Rio Pueblo de Taos to Red River), although this assessment unit is currently not on the 303(d) list. The Carson National Forest primarily manages these watersheds. Greg Miller, Soil Scientist, Carson National Forest, 505-758-6251, should be contacted for questions regarding watershed stability and/or USFS restoration efforts in specific areas damaged by the Hondo fire. Also contact George Long, Carson National Forest, 505-586-0520, regarding rehabilitation efforts after the Hondo fire and the impacts of sedimentation to the Rio Grande.*

COMMENT: (4) In the case of Embudo Creek, there should have been some sort of regulations in place to prevent the devastating degree of destabilization, development and "vehicle use in arroyos".

***RESPONSE:** *The SWQB does not develop or enforce land use regulations on federally managed lands. The Bureau of Land Management (BLM) primarily manages the land surrounding Embudo Creek. Please contact Mark Blakeslee (505-438-8740) for specific concerns regarding regulations regarding destabilization, development and vehicle use in arroyos.*

COMMENT: Who is responsible for protecting these rivers? Why aren't they being held accountable? What good is government if this is allowed to happen?

***RESPONSE:** *A variety of federal, tribal, state, county, local, and private land management agencies, organizations, and associations are involved in protecting watersheds and rivers throughout New Mexico. Also, all citizens are responsible for protecting water quality. Water quality is protected through the direct action of individuals not polluting the water of the state, and through the indirection action of electing public representatives who set environmental policy and regulations at the local, state, and federal level that govern the activities of communities, municipalities, land use associations, and corporations. If citizens are unsatisfied with the job their elected government is doing to protect the environment, it is their civic responsibility to work towards electing a government that better reflects their values and beliefs. It is also everyone's responsibility to take an active role in educating friends, family, and neighbors on the value and benefit of clean water for all.*

Thank you for the opportunity to comment.

(Mr.) Tracy McCallum
tsm@laplaza.org

COMMENT SET C --

NEW MEXICO INTERSTATE STREAM COMMISSION

COMMISSION MEMBERS

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July 19, 2002

David Hogge
Surface Water Quality Bureau
New Mexico Environment Department
Post Office Box 26110
Santa Fe, New Mexico 87502

Dear Mr. Hogge:

This letter is in response to the Environment Department's invitation to submit formal comments for inclusion in the public record on the draft 2002-2004 State of New Mexico Section 303(d) List (Draft List). The following comments are general in nature and address the Draft List as a whole.

COMMENT: The document should include definitions for acronyms that are used in the document, such as SBD, PCB, TMDL, TOC, DO, TDS, etc. The document should also include for clarity, descriptions of sources of impairment.

***RESPONSE:** *Definitions for SBD, PCB, TMDL, TOC, DO, and TDS have been added to the key at the beginning of the list and ROD. SWQB feels that the Probable Sources of Impairments are clear enough to relay the information intended on the 303(d) list. Broader descriptions of sources are provided in individual TMDLs as they are prepared for each impairment by assessment unit.*

COMMENT: "Fish guidelines" and "Biological criteria" are listed as probable causes of impairment. Fish guidelines do not cause impairment. It would be more appropriate to identify mercury bioaccumulation or similar descriptive agents and/or processes as the causes of impairment. Similarly, biological criteria do not cause impairment.

***RESPONSE:** *"Fish guidelines" has been changed to "Mercury in fish tissue" because this is the reason why these assessment units are on the Fish Consumption Guidelines. USEPA requires New Mexico to list all waters with fish consumption guidelines on the 303(d) list. There was only one listing for "biological criteria" -- Pecos River (TX border to Black River). This probable cause of impairment was removed because the reduced biological score (21% of*

reference) will be studied and addressed under the “stream bottom deposit” listing. Therefore, listing “biological criteria” was redundant.

COMMENT: “Recreation and Tourism Activities (other than Boating – see 7900)” is listed as a probable source of impairment. It is unclear what “see 7900” refers to.

***RESPONSE:** *The source code 8700 -- “Recreation and Tourism Activities (other than Boating – see 7900)” -- is a national probable source code that is defined in the Assessment Database (ADB) MS Access front-end that was developed by USEPA. The code 7900 refers to potential impairment from marinas. Unfortunately, ADB has limitations, one of which is that we cannot modify national probable source codes.*

COMMENT: “Industrial Point Sources” are listed as a probable source of impairment for reaches and water bodies that have no associated NPDES discharges.

***RESPONSE:**

The “NPDES” field was deleted and replaced with the “Individual Active NPDES Permit” information towards the bottom of each entry. This information is provided to alert users of the 303(d) list that there are active NPDES discharge permits in the watershed of the given assessment unit. The expanded information includes Permit Number and Permit Facility Name. This information is queried from the SWQB database. This database currently tracks Individual NPDES permits only (i.e., it does not include General NPDES permits such as storm water permits). The NPDES query was restricted to include only Active permits. Some NPDES permittees discharge directly into the given assessment unit, while others discharge into tributaries of the given assessment unit. Users of the 303(d) list should contact the SWQB Point Source Regulation Section (phone 827-2827) for additional information on individual NPDES permits.

Also, a new Probable Source code was developed termed “Industrial Storm Water Sources” which better describes assessment units that may be impacted by general storm water permits. This code was added to the following assessment units: Guaje Canyon, Los Alamos Canyon, Pueblo Canyon, Rendija Canyon, Mortandad Canyon, and Water Canyon. “Industrial Point Sources” was removed from the following canyons that do not fall under an Individual NPDES permit: Guaje Canyon, Pueblo Canyon, and Rendija Canyon.

Additionally, several playa lakes noted “Industrial Point Sources” as Probable Sources in the draft 303(d) list. This has been corrected to major code “Resource Extraction” to cover past and/or present oil and gas activities and/or potash mining.

COMMENT: “Hydromodification”, “Flow Regulation/Modification”, “Channelization” and “Dam Construction” are simultaneously listed as probable sources of impairment. It is not clear what unique characteristics distinguish these sources of impairment from each other.

***RESPONSE:** *The source code 7000 -- “Hydromodification” -- is a national probable source major code that is defined in the Assessment Database (ADB) Version 1 MS Access front-end that was developed by USEPA. Codes 7100, 7300, and 7400 are national probable source sub codes defined as “Channelization,” “Dam Construction,” and “Flow Regulation/Modification,” respectively. Unfortunately, ADB has limitations, one of which is that major codes are displayed*

along with sub codes. For example, both “Hydromodification” and “Channelization” will appear on the list as probable sources even though we only entered the code for “Channelization.” ADB Version 2 was recently released and is now Oracle based. We are hoping that this version will allow us more flexibility to correct these reporting problems.

COMMENT: “Total Rec. Selenium” is listed as a probable cause of impairment. It is not clear what “Rec.” refers to.

***RESPONSE:** “Rec.” refers to Recoverable. Unfortunately, ADB has limitations, one of which is that the number of characters allowed to define probable sources and causes is limited. “Rec.” has been added to the key at the beginning of the 303(d) list and the ROD.

COMMENT: “Irrigated Crop Production”, “Nonirrigated Crop Production”, “Crop-related Sources”, and “Agriculture” are simultaneously listed as probable sources of impairment. It is not clear what unique characteristics distinguish these sources of impairment from each other.

***RESPONSE:** The source code 1000 -- “Agriculture” -- and code 1050 -- “Crop-related Sources” are national probable source major code that is defined in the Assessment Database (ADB) Version 1 MS Access front-end that was developed by USEPA. Codes 1100 and 1200 are national probable source sub codes defined as “Nonirrigated Crop Production” and “Irrigated Crop Production” respectively. Unfortunately, ADB has limitations, one of which is that major codes are displayed along with sub codes. For example, “Agriculture,” “Crop-related Sources,” and “Irrigated Crop Production” will appear on the list as probable sources even though we only entered the code for “Irrigated Crop Production.” ADB Version 2 was recently released and is now Oracle based. We are hoping that this version will allow us more flexibility to correct these reporting problems.

COMMENT: “Silviculture” and “Logging Road Construction/Maintenance” are simultaneously listed as probable sources of impairment. It is not clear why “Silviculture” does not encompass “Logging Road Construction/Maintenance”.

***RESPONSE:** The source code 2000 -- “Silvaculture” is a national probable source major code that is defined in the Assessment Database (ADB) Version 1 MS Access front-end that was developed by USEPA. Code 2300 is a national probable source sub code defined as “Logging Road Construction/Maintenance.” Unfortunately, ADB has limitations, one of which is that major codes are displayed along with sub codes. For example, “Silvaculture” will appear on the list as probable sources even though we only entered the code for “Logging Road Construction/Maintenance.” ADB Version 2 was recently released and is now Oracle based. We are hoping that this version will allow us more flexibility to correct these reporting problems.

COMMENT: “Harvesting, Restoration, Residue Management” is listed as a probable source of impairment. It is not clear what is being harvested and/or restored or what residue is being managed.

***RESPONSE:** *This national probable source sub code defined in ADB is intended to cover the main activities that take place during basic timber operations. SWQB feels that the Probable Sources of Impairments are clear enough to relay the information intended on the 303(d) list. Broader descriptions of sources are provided in individual TMDLs as they are prepared for each impairment by assessment unit.*

COMMENT: A final comment on the Draft List is specifically directed to page 96, Laguna Walden. Attainment status is listed as “not attainable”. “Probable Causes of impairment” and “Probable Sources of impairment” are blank. Causes and sources of non-attainment should be listed.

***RESPONSE:** *This listing on the draft 303(d) list was deemed incorrect upon further review and was removed from the 303(d) list and ROD. Although high salinity was observed (1992 Playa Lakes Report NMED/SWQ-93/2), there are no applicable salinity standards under the designated uses of Livestock Watering and Wildlife Habitat.*

In addition to the aforementioned comments, I make the following comments on the Final Draft 303(d) Record of Decision (Draft ROD) that was included along with the Draft List on the compact disc distributed to Water Quality Control Commissioners at the Commission’s July meeting. The following comments are general in nature and address the Draft ROD as a whole.

COMMENT: The document should include definitions for acronyms that are used in the document, such as DO, FSIO, PS, FS, bio, etc. The document should also include the criteria that lead to conclusions that a reach or water body is fully supporting, impacts observed; fully supporting; partially supporting, etc.

***RESPONSE:** *Definitions for DO, FSIO, PS, and FS have been added to the key at the beginning of the list and ROD. Conclusions on impairment are reached through use of our USEPA-reviewed assessment protocols entitled Assessing Standards Attainment for the 303(d) List and the 305(b) Report which are found on our website. The ROD is an in-house document used to document changes to the 303(d) list. It is not intended to be a complete summary of all data collected and used in the assessment. Supporting information is kept in the administrative record in our office that is available for public review upon request.*

COMMENT: The Draft ROD uses notation in the form of 5/5, 4/4, 1/3, 0/5, etc. without explanation as to its meaning, as on page 4, “Temperature data indicated the fishery use was not supported at 3 of 4 stations (5/5, 4/4, and 5/5) while it was supported at only one station (0/5).” In some instances, such as that on page 178, the use of this notation is clear, as in, “For conductivity, 3/3 (100%) of the samples exceeded the criteria.” The document needs consistency and clarity in the use of the aforementioned notation.

The document is confusing in that 1998 actions are described most often in the future tense, 2000 are described in the future tense, but 2002 actions are usually described in the past tense.

A dry channel can be monitored but not sampled for water temperature, conductivity, total phosphorus, etc. References to “sampling” a dry channel, such as those on page 177, should be

changed to reflect, for example, that said channel was monitored 10 times, was dry 5 times, and was sampled 5 times.

Some 2002 actions state that a de-list letter was prepared. The significant action is not that a de-list letter was prepared, but that the WQCC acted on the proposed de-listing to approve or not approve the action.

It is not clear what constitutes an “Action”. Many “Actions” contain so much narrative explanation that it is difficult to identify the accomplishment. I suggest that “Actions” be listed by year, as this seems to be the intent, and that narrative explanation be relegated to the introductory paragraphs associated with each reach or water body.

****RESPONSE:** The ROD used as a historical record to document changes to the 303(d) list. It was started in 1998 to house information related specifically to the history of the 303(d) list in notation that is understood and useful to the staff working on assessments, listings, and TMDLs. For example, the significant action taken by staff is that the de-list letter was prepared. If the WQCC did not approve the de-list letter, it would be noted accordingly. SWQB recognizes that the format and organization of the ROD is not perfect, but the format and information is adequate for the intent of this historical record. It is not intended to house a complete summary of all data collected and used in the assessment. Supporting information is kept in the administrative record in our office that is available for public review upon request. In the future, we hope to incorporate information in the ROD into the database in order to present the information in tabular format as appendices to the list.*

Thank you for the opportunity to provide comments on the Draft List and Draft ROD.

Sincerely,

John Whipple
Staff Engineer

JW:rav

r:\iscprogs\hogge1file9.f02

COMMENT SET D --

Received via email 8/7/02 from Marcos Ortiz (numbers_r4u@yahoo.com)

Subject:

Date: Wed, 7 Aug 2002 07:23:41 -0700 (PDT)
From: Marcos Ortiz <numbers_r4u@yahoo.com>
To: david_hogge@nmenv.state.nm.us

David

Attached you'll find my comments:

COMMENT: - What is the water quality in the Rio Hondo?

***RESPONSE:** *The Rio Hondo was intensively sampled in 1975, 1979, 1980, 1981, 1992, and 2000 by the Surface Water Quality Bureau (NMED SWQB/EID 1981, 1992, 2002 in draft). A 1992 water quality survey (Feb.-December) showed very few exceedances (10) of the New Mexico Water Quality Standards. One exceedance for total inorganic nitrogen was observed directly below the Twining WWTP in February while the remainder of the exceedances were observed in Valdez and Arroyo Hondo (temperature, nutrients and un-ionized ammonia) and were probably caused by the rivers proximity to the communities of Valdez and Arroyo Hondo, and specifically to perturbations associated with livestock grazing, irrigation return flow, septic tank leach fields and other agricultural activities (Jacobi et al 1998). Exceedances of the un-ionized ammonia standard at the site above the Rio Grande can be attributed to a lack of canopy vegetation along the riparian strip, in turn contributing to increased primary productivity, elevated temperatures and pH (Jacobi et al 1998). An associated intensive benthic macroinvertebrate study in 1992 noted that the Twining WWTP had a localized effect on the biological condition of the upper Rio Hondo. According to the study, the influence to the biological condition was minimal as the flow left the Carson National Forest (Jacobi et al 1998).*

Four stations on the Rio Hondo were surveyed as part of the Upper Rio Grande I intensive water quality survey in 2000.

The results of this latest survey are reflected in the 2002-2004 Clean Water Act 303(d) list. The following is a section from the draft report summarizing the results (NMED SWQB 2002 in draft):

Rio Hondo (Rio Grande to US Forest Service boundary)

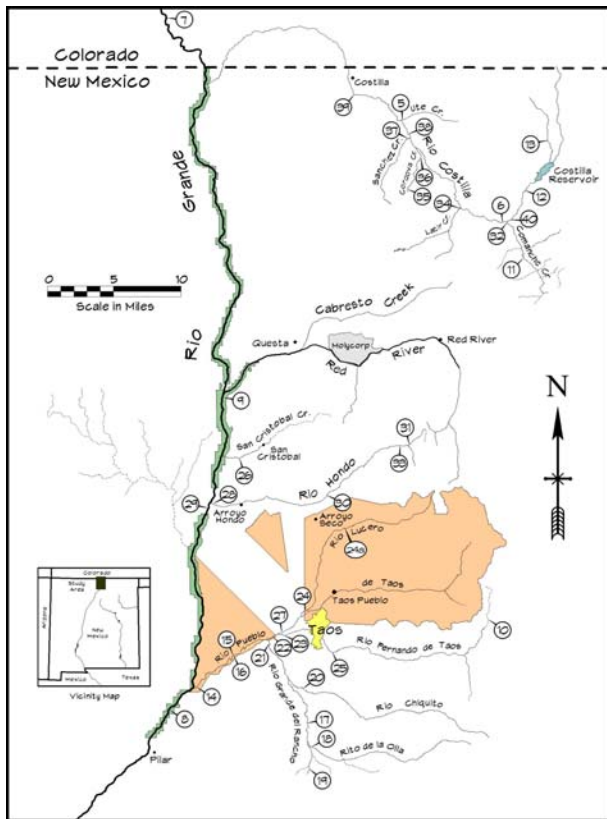
This assessment unit was not included on the 2000-2002 §303(d) list.

One value for pH (8.92) was outside the allowable range (6.6-8.8) on 19 October out of eight samples collected at Station 28. However, the proportion of exceedences was such that this assessment unit is in full support of the pH standard, but impacts have been observed that warrant close attention during future surveys.

The temperature criterion (20°C) was exceeded twice (21.7°C on 31 July; 21.9°C on 01 August) out of eight samples collected at Station 28. Thus, this assessment unit is in partial support for temperature.

Rio Hondo (South Fork Rio Hondo to Lake Fork Creek)

This assessment unit was not included on the 2000-2002 §303(d) list.



One exceedence (8.03 mg/L) of the total organic carbon criterion (7.0 mg/L) was detected on 01 August at Station 31 out of eight samples collected at each of two stations in this assessment unit. Thus, the proportion of exceedences was such that this assessment unit is in full support of the total organic carbon standard.

Rio Hondo (US Forest Service boundary to South Fork Rio Hondo)

This assessment unit was not included on the 2000-2002 §303(d) list.

No exceedences of water quality criteria were detected during this survey.

COMMENT: - Waste water discharge from Twining Water and Sanitation District (TWSD) (a.k.a., Taos Ski Valley) into the Rio Hondo effects on the ecosystem.

***RESPONSE:** *Benthic macroinvertebrate collections (quantitative--3 Hess samples/site) from sites on the upper Rio Hondo (upstream of the Twining plant downstream to the USFS boundary) showed no differences from the upper and lower sites. In fact the lowest site at the USGS gaging station is used as a reference site by SWQB for macroinvertebrate analysis. The upper most site above the ski valley produced 40 high quality taxa of benthic macroinvertebrates while 41 taxa were observed at the lower site indicating that the biological integrity along with the water quality necessary to support it was similar. The macroinvertebrate community below the WWTP, however did show moderate impairment because of the effluent discharge due to nutrient enrichment and parking lot runoff during the winter months. However, year in and year out, recovery occurs by Italianos Canyon. This condition does not occur during the summer. Sites downstream of the USFS boundary have shown a slight impairment to the benthic communities due to the perturbations caused by the close proximity (mentioned in previous question) of Valdez and Arroyo Hondo to the river (Jacobi et al 1998). Benthic macroinvertebrates collected from the 2000 survey, although limited in scope, showed the macroinvertebrate communities above Valdez (at the gage) and above the Rio Grande to be non-impaired (NMED SWQB 2002 in draft).*

COMMENT: - Waste water pollution into the Rio Hondo and effect on crops (i.e., corn, wheat, vegetables, alfalfa, ...etc.).

***RESPONSE:** *The Compliance Evaluation and Sampling Inspection reports from 1993 to the present indicate that plant operations, maintenance and effluents are meeting NPDES permit requirements. Periodic sampling is preformed by NMED of the effluent, upstream, and downstream of the treatment plant. The sample results indicate that the treatment plant has a minimal influence on the receiving stream and in fact the receiving*

stream condition has improved substantially over the years. The condition of nuisance algae no longer exists since the phosphorus limitations have been, and are being met.

The most recent Compliance Evaluation Inspection of Twining by NMED was conducted on March 4, 2002. This inspection included a review of DMRs for the years 2000, 2001, and 2002. During this time period, there were no exceedences of effluent discharge limits. The WWTP is required to meet effluent limits for the following conditions and pollutants: Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Fecal Coliform Bacteria (FC), Total Residual Chlorine (TRC), Phosphorus (P), pH, and Nitrogen Ammonia.

Irrigation is a designated use for the Rio Hondo under the State of New Mexico Standards for Interstate and Intrastate Surface Waters (20.6.4. NMAC) with specific numeric criteria to protect that use. The 1992 and 2000 reports showed this use to be supported (i.e., not impaired).

COMMENT: - New Mexico Environment Department (NMED) testing results of water quality on the Rio Hondo and seepage into the water table?

***RESPONSE:** *See Response to the first Comment for a summary of surface water quality sampling. The Surface Water Quality Bureau does not sample groundwater. For question regarding groundwater quality, please contact the Ground Water Protection and Remediation Bureau at 505-827-2918. The Rio Hondo is likely a gaining stream, which means it receives some of its flow from the water table or ground water. If this is the case, it is more likely that any contaminants in the water table seep into the stream rather than contamination of the water table from the stream. There has been an increase in development in the Rio Hondo area in recent years. Septic tanks may increase the nutrient loading into the Rio Hondo from Valdez to the Rio Grande. Many of these new homes have septic tanks because wastewater lines are not extended far enough to bring these new homes into the system. Inadequate or malfunctioning septic systems can lead to seepage into the water table. The NMED Field Operations Division handles liquid waste permits and would be the appropriate contact for septic systems concerns (phone 505-827-2839).*

COMMENT: - TWSD violations records and actions taken by NMED.

***RESPONSE:** *When the Twining plant was first constructed in 1967, inferior design of the plant and excessive collection line infiltration caused the plant to be a source of pollution in the Rio Hondo (SWQB/EID 1981). Inadequate operation and maintenance was a major factor causing frequent violations of the NPDES permit conditions. Violations of effluent limitations occurred regularly during the 1970s, causing violations of the stream standards and damage to the aquatic habitat. The most frequent violations were for bacteria, residual chlorine, and total phosphorus (USEPA 1981, NM EID 1975).*

In 1979, the State of New Mexico Environmental Improvement Division (EID) developed and implemented a new enforcement posture based on persistent application of the state's Water Quality Control Commission Regulations (WCQQ). In 1980, the WCQQ and TWSD signed an Assurance of Discontinuance that required compliance with WQCC Regulations. To accomplish this, TWCD improved operation of the treatment plant, made substantial changes in the plant design, hired a level III state-certified operator, increased its operating budget, and continued water conservation measures. These measures were implemented and improvements in effluent quality resulted (USEPA 1981). The Waste Load Allocation (WLA), which determines loading limits of pollutants in order to protect water

quality standards, was approved and incorporated into the New Mexico Water Quality Management Plan (WQMP) in 1981. The phosphorus limit in the WLA was incorporated into the NPDES permit for the Twining Waste Water Treatment Plant (WWTP) in 1983. The limits have not changed since that time. Nuisance algae were an issue being addressed with the phosphorus limits for the Rio Hondo.

During the mid to late 1980s it was generally assumed by NMED (or its predecessor the EID of the New Mexico Health and Environment Department) that Twining was a facility not operating effectively to meet the permit effluent limits. Extra efforts were made as a result of this assumption, including nearly weekly visits and or inspections of the WWTP. These efforts were made to improve operations at the WWTP.

Jim Steele, the District Engineer of the Twining Water and Sanitation District, and Ken Burckett, the WWTP Superintendent took over plant operations in the late 1980s. With this new management, a new philosophy emerged at Twining, resulting in a spirit of cooperation with the NMED to achieve the best possible operations for the WWTP. This cooperation continues today. At the present time, a good working relationship exists and the lines of communication are open.

Operational and physical changes were made to the treatment plant, which resulted in an increasingly improved effluent over time. The physical improvements at the WWTP included slip-lining the collection system for infiltration and inflow removal, replacing old equipment with new equipment, and installing equipment to prevent possible spill situations. Operational changes included improving training and laboratory techniques to ensure that the data reported on the Discharge Monitoring Reports (DMRs) would be accurate.

The Compliance Evaluation and Sampling Inspection reports from 1993 to the present indicate that plant operations, maintenance and effluents are meeting NPDES permit requirements. Periodic sampling is preformed by NMED of the effluent, upstream, and downstream of the treatment plant. The sample results indicate that the treatment plant has a minimal influence on the receiving stream and in fact the receiving stream condition has improved substantially over the years. The condition of nuisance algae no longer exists since the phosphorus limitations have been, and are being met.

The most recent Compliance Evaluation Inspection of Twining by NMED was conducted on March 4, 2002. This inspection included a review of DMRs for the years 2000, 2001, and 2002. During this time period, there were no exceedences of effluent discharge limits. The WWTP is required to meet effluent limits for the following conditions and pollutants: Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Fecal Coliform Bacteria (FC), Total Residual Chlorine (TRC), Phosphorus (P), pH, and Nitrogen Ammonia.

An accidental spill of 200 pounds of sewage sludge into the Rio Hondo took place on February 23, 2001. Water samples taken by NMED showed no significant or long-term effects on the Rio Hondo water quality from this spill. A check valve has been installed to prevent future spills of this nature from occurring.

References cited:

Jacobi, G.Z., L.R. Smolka, and M.D. Jacobi. 1998. Use of biological assessment criteria in the evaluation of a high mountain stream, the Rio Hondo, New Mexico, USA. *Proceedings from the International Association for the Theoretical and Applied Limnology, Congress in San Paulo 1995.* pp 1227-1234.

New Mexico Environment Department Surface Water Quality Bureau (NMED SWQB/EID). 1981. Point source waste load allocation for the Twining Water and Sanitation District. 35 pp.

NMED SWQB/EID. 1992. Special water quality survey of the Rio Hondo, Taos County, New Mexico. pp 75-106.

NMED SWQB/EID. 2002 in draft. Special water quality survey of the upper Rio Grande watershed between the New Mexico - Colorado border and Pilar, Rio Arriba and Taos Counties, New Mexico, May – October, 2000. 18 pp.

New Mexico Environmental Improvement Division (NMEID). 1975. Water quality of the Rio Hondo. 10 pp.

U.S. Environmental Protection Agency (USEPA). 1981. Draft environmental impact statement for wastewater treatment facilities: Twining Water and Sanitation District, New Mexico, Lee Wilson and Associates, Inc. Santa Fe, NM.

Marcos P. Ortiz

p.s., David please send me response back indicating that you recieved my e-mail

COMMENT SET E --

Received via email 8/8/02 from Ellen Brodsky (ellenbro@laplaza.org). Francis Chandler from the same community provided similar comment by phone on 8/8/02.

Subject: Impaired waters/Rio Don Fernando de Taos
Date: Thu, 8 Aug 2002 14:33:16 -0600
From: "Ellen Brodsky" <ellenbro@laplaza.org>
To: <david_hogge@nmenv.state.nm.us>

Dear Mr. Hogge,

COMMENT:

I read in the Taos News that you are seeking input from the public regarding the impaired waters in Taos. I would like to comment on the Rio Don Fernando de Taos.

This river flows next to the Vista del Canon condominium complex. According to the newspaper, this river is threatened by residential septic tanks.

I would like to call your attention to the pending septic variance that was recently granted by the NMED to the developers of the condominium complex so that they will be able to build 18 new units. Their proposed system, the Nayadic system, is a high-maintenance system that the developers plan to install, then leave to the homeowners to maintain. We are not a rich association. We have no maintenance staff and provide no services other than garbage collection and electricity for our drinking water wells. The developers' record from their previous work is less than reassuring. Our four-year-old road is crumbling, our current septic system was installed without markers to enable us to clean them and their permit application for the current system undercounted the number of existing bedrooms in the complex.

Given that situation, I think it is all the more imperative that the NMED do everything in its power to limit further pollution into this river. The only purpose for the variance is to allow the developers to build more vacation homes and make more money than they would otherwise be able. Do we really want to further pollute our precious resources just to enrich them?

***RESPONSE:** *Thank you for bringing our attention to this matter. We received similar comment via phone from Francis Chandler who also lives in your community. Three stations on the Rio Hondo were surveyed as part of the Upper Rio Grande I intensive water quality survey in 2000. The results of this latest survey are reflected in the 2002-2004 Clean Water Act 303(d) list. The following information is a section from the draft report summarizing the results (NMED SWQB 2002 in draft):*

Rio Fernando de Taos (Rio Pueblo de Taos to headwaters)

This assessment unit was included on the 2000-2002 §303(d) list as partially supported for stream bottom deposits and metals (acute aluminum).

Combined geomorphologic and benthic macroinvertebrate data from this assessment unit indicate full support for stream bottom deposits.

No exceedences of the acute dissolved aluminum criterion were detected out of eight samples collected at each of three stations.

Sincerely,
Ellen Brodsky
President
Vista del Canon homeowners

COMMENT SET F --

Received via email 8/8/02 from Paige A. Grant, Executive Director, Santa Fe Watershed Association (sfwatershed@earthlink.net).

Subject: additional impaired reach of Santa Fe River
Date: Thu, 8 Aug 2002 12:17:36 -0600
From: "Santa Fe Watershed Association" <sfwatershed@earthlink.net>
To: <david_hogge@nmenv.state.nm.us>

Dear Mr. Hogge:

COMMENT:

I realize that all problems of our rivers and streams cannot be addressed through the 303(d) and TMDL process. Nonetheless, it is ironic that the most heavily impacted reach of the Santa Fe River does not even register as a river in the 303(d) list, because it has been effectively dewatered. Instead, TMDLs have been established for a portion of the river that is really a manufactured flow of treated effluent. What's wrong with this picture?

I would request that the Santa Fe River between the City's Nichols Reservoir and the Wastewater Treatment Plant be listed as impaired due to groundwater withdrawal, stormwater management practices, cross-connected storm and sanitary sewers, misuse of storm drains for unpermitted discharges, unpermitted dredge and fill activities and poor vegetative cover from past grazing activity. I refer you to the Santa Fe River Watershed Restoration Action Strategy (January 2002; posted on the NMED website), for details on the history of the dewatering and degradation of this section of the Santa Fe River. The Santa Fe Watershed Association has documentation on the sources of impairment listed above, which we will be glad to make available on request.

*RESPONSE:

The Clean Water Act Section 101(g) [33 U.S.C. 1251(g)] states:

It is the policy of Congress that the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired by this chapter. It is the further policy of Congress that nothing in this chapter shall be construed to supersede or abrogate rights to quantities of water that have been established by any State. Federal agencies shall co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources.

The parallel in the New Mexico Water Quality Act is Section 74-6-12(A) which states:

The Water Quality Act does not grant to the commission or to any other entity the power to take away or modify the property rights in water, nor is it the intention of the Water Quality Act to take away or modify such rights.

The dewatering of streams by storage reservoirs and ditches is generally done under the authority of recognized water rights. Under the water law doctrine that has developed in the arid west, those water rights have been declared by most courts to be property rights. In general, this means that the persons who have water rights are allowed to divert or store the water for their uses and that diversion or storage cannot be controlled by either the federal Clean Water Act or the state Water Quality Act. New Mexico has a lack of legal protection for instream flows that would protect wildlife, fish, and recreational uses. In a nonbonding legal opinion 98-01

dated March 27, 1998, Attorney General Tom Udall's office said that neither state law nor the New Mexico Constitution precludes the transfer of an existing water right to an in-stream use. According to the opinion, groups or individuals that water to preserve flow for endangered species or for the health of the river itself must compete with other users to acquire water rights or apply to change existing uses to instream flows.

Section 74-6-4(D) of the state Water Quality Act directs the Commission to adopt regulations to prevent or abate water pollution. Water pollution is defined in Section 74-6-2(B) as "introducing or permitting the introduction into water, either directly or indirectly, of one or more water contaminants in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life or property, or to unreasonably interfere with the public welfare or the use of property." Thus, the Act applies to adding things to water, not taking water out of the stream. While we agree that the dewatered portion of the Santa Fe River is highly degraded due to the probable sources you mentioned, there needs to be surface water present for there to be water quality for the SWQB to assess so they we may determine the probable cause of impairment.

The Santa Fe River below the wastewater treatment plant outfall if covered by Water Quality Standard (WQS) segment 20.6.4.113. The Santa Fe River above the wastewater treatment plant outfall is covered under WQS segment 20.6.4.121 which states: "Perennial tributaries to the Rio Grande in Bandelier National Monument and their headwaters in Sandoval county, all perennial reaches of tributaries to the Rio Grande in Santa Fe county unless included in other segments." As stated, only perennial portions of the Santa Fe River are protected by the designated uses listed for segment 20.6.4.121. Intermittent and ephemeral portions are protected for Livestock Watering and Wildlife Habitat uses. It is SWQB's practice to add or remove probable causes of impairment to the 303(d) list only when we have data to support the action. We have listed ephemeral waters when recent data indicates that water quality criteria for these Livestock Watering and Wildlife Habitat uses are exceeded. Impairment is determined through use of our assessment protocols entitled Assessing Standards Attainment for the 303(d) List and the 305(b) Report which are found on our website. We primarily use data gathered during our intensive watershed studies that have been collected in accordance to our Quality Assurance Project Plan for Water Quality Management Programs (QAPP). We also utilize data from a variety of other sources, detailed at the beginning of our assessment protocols. According to our protocols, SWQB must approve quality assurance / quality control (QA/QC) plans from any citizen or volunteer monitoring group before using their data in our assessments. Please submit any and all surface water quality data your organization would like us to consider along with your QA/QC plan. Staff from our office can help you develop a QA/QC plan if your organization does not already have one in place

Thank you for considering this request to add the above-cited section of the Santa Fe River to the New Mexico 303(d) list of impaired streams.

Sincerely,

Paige A. Grant, Executive Director
Santa Fe Watershed Association
PO Box 31160
Santa Fe, NM 87594-1160
(505) 820-1696; FAX 986-0339
sfwatershed@earthlink.net

COMMENT SET G --

Received via letter by the San Juan Water Commission

August 6, 2002

Mr. David Hogge
Program Manager, TMDL Development Section
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: Comments/Questions re Draft 2002-2004 Section 303(d) list

Dear Mr. Hogge:

We have reviewed the draft 2002-2004 State of New Mexico Section 303(d) list of water quality limited waters requiring TMDLs. I am sending this letter within the 30-day public comment period for the sole purpose of obtaining additional information about the change in priority designation of two reaches (identified below) of the San Juan River. Please note that, by this letter, the San Juan Water Commission is simply seeking information and is not, at this time, challenging the placement of those river reaches on the section 303(d) list.

COMMENT: The two river reaches in question are:

- (1) the San Juan River from the Animas River to Canon Largo; and
- (2) the San Juan River from Canon Largo to Navajo Dam.

Our review and comparison of the 2000-2002 and draft 2002-2004 section 303(d) lists shows that these two river reaches have moved from a priority designation of "4" to a priority designation of "1." We understand, based on information you provided to our counsel, Jolene McCaleb, that the priority designation in the section 303(d) list has no impact on the TMDL process. Rather, the priority designation simply alerts that SWQB that certain river reaches require special care during testing, etc. For example, the new priority "1" designation for the two river reaches at issue indicates that the SWQB believes an endangered species, the Colorado Pikeminnow, exists in those reaches, and the SWQB must therefore take extra care when conducting various tests, such as using an electrical change to obtain fish samples.

Please let us know if our understanding of the purpose of the priority designation in the draft section 303(d) list is incorrect. In other words, if the priority designation does impact the TMDL process in some way, please let us know how so we can consider that impact and prepare appropriate commentary, if necessary.

***RESPONSE:** *Your understanding is correct. The priority designation does not impact the TMDL process in any way. A high priority (i.e., low priority number) indicates to staff that there are additional concerns, such as endangered aquatic species, in the assessment unit. TMDLs for the San Juan River are due 2004 according to the consent decree.*

COMMENT: Also, we are surprised that the two river reaches at issue have jumped to a priority designation of "1" because we do not believe they are within the critical habitat designation for the Colorado Pikeminnow.

If the SWQB has information indicating that this fish does now exist in the San Juan River between the Animas River and Navajo Dam, we would appreciate obtaining a copy of such information.

***RESPONSE:** *SWQB takes a conservative approach to prioritizing waters with potential aquatic endangered species concerns. Colorado pikeminnow is not documented as currently existing in the San Juan River upstream of the Animas River. However, there is documentation of a reproducing population of Colorado pikeminnow in the San Juan River in New Mexico downstream of Shiprock as recently as the late 1980s (Platania et al. 1991, Ryden and Ahlm 1996). Recruitment to adult size has been documented as recently as 1996 (Propst 1999). Thus, in order to be conservative, SWQB contends that there is a possibility of the species existing upstream of Shiprock. To our knowledge, this reach is not currently included in the designated critical habitat.*

References:

Platania, S.P., K.R. Bestgen, M.A. Moretti, D.L. Propst, and J.E. Brooks. 1991. Status of Colorado squawfish and razorback sucker in the San Juan River, Colorado, New Mexico, and Utah. The Southwestern Naturalist 36:147-150.

Propst, D.L. 1999. Threatened and endangered fishes of New Mexico. Technical Report No. 1. New Mexico Department of Game and Fish, Santa Fe, NM 84 pp.

Ryden, D.W. and L.A. Ahlm. 1996. Observations on the distribution and movements of Colorado squawfish, Ptychocheilus lucius, in the San Juan River, New Mexico, Colorado, and Utah. The Southwestern Naturalist 41:161-168.

Thank you in advance for providing the information requested above. Of course, if you have any questions about our comments or information requests, please give me or Jolene McCaleb a call.

Sincerely,

L.Randy Kirkpatrick
Executive Director